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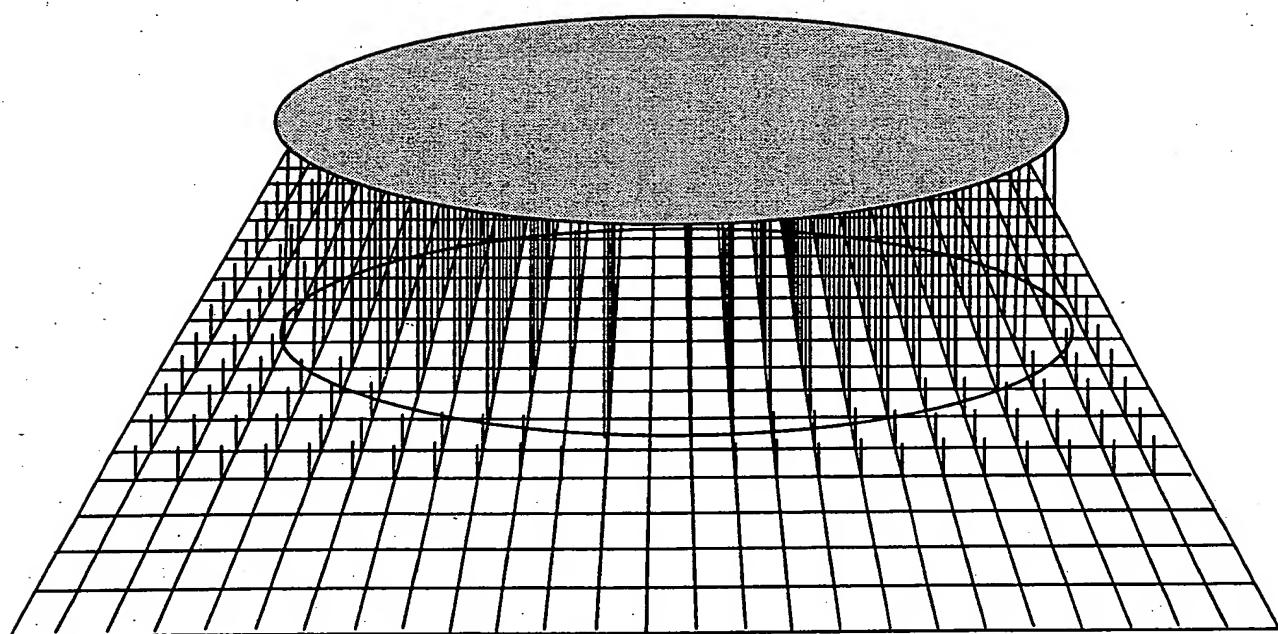


Fig. 1

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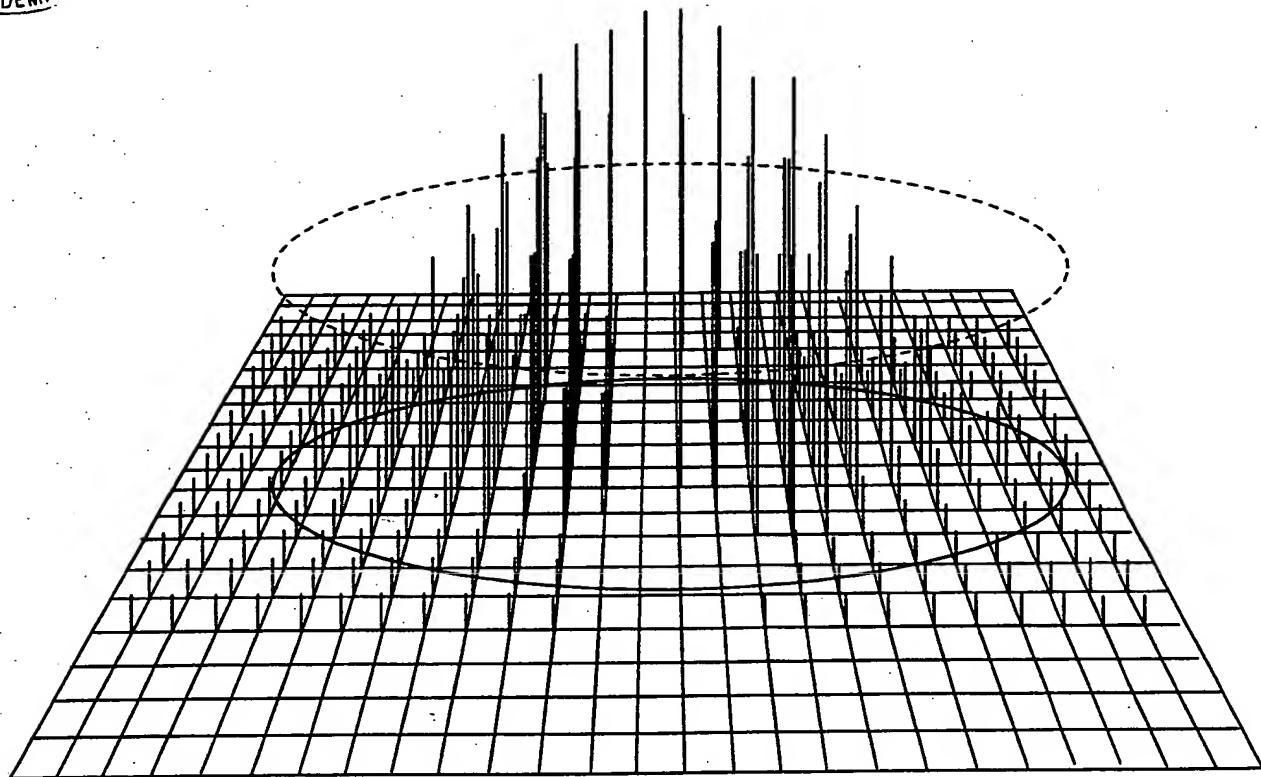


Fig. 2

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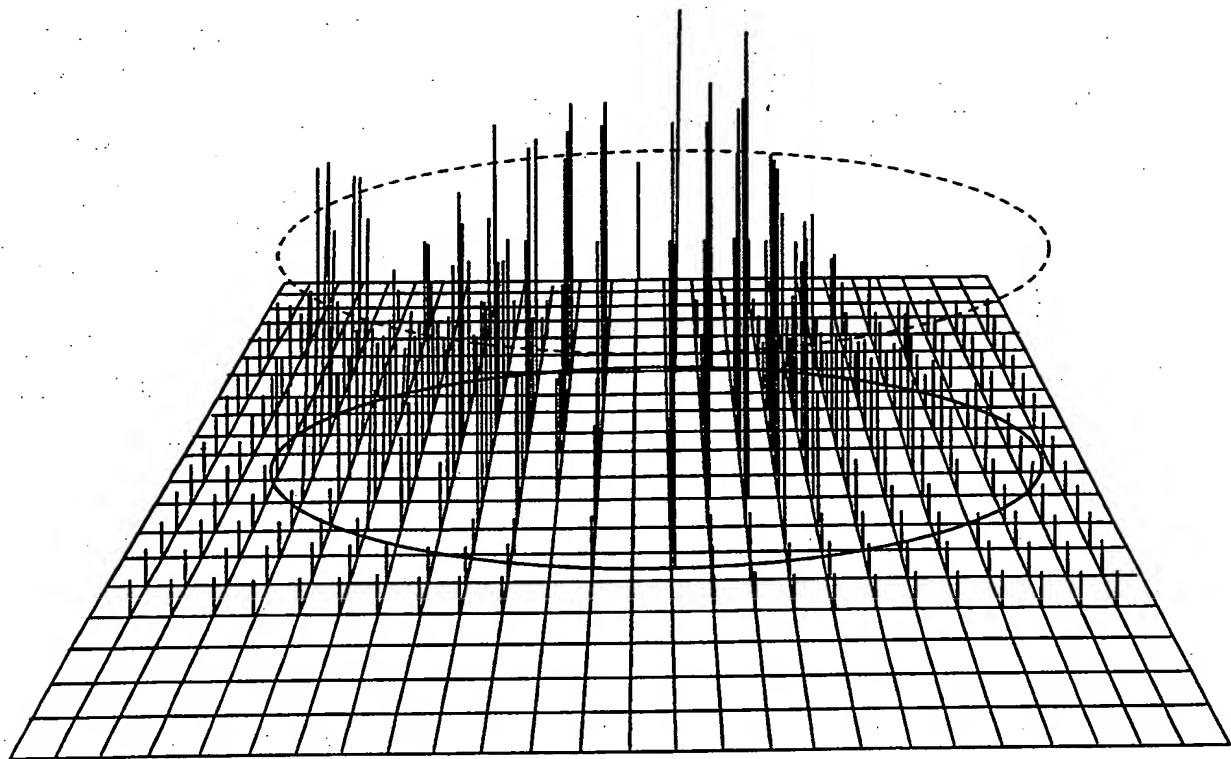


Fig. 3



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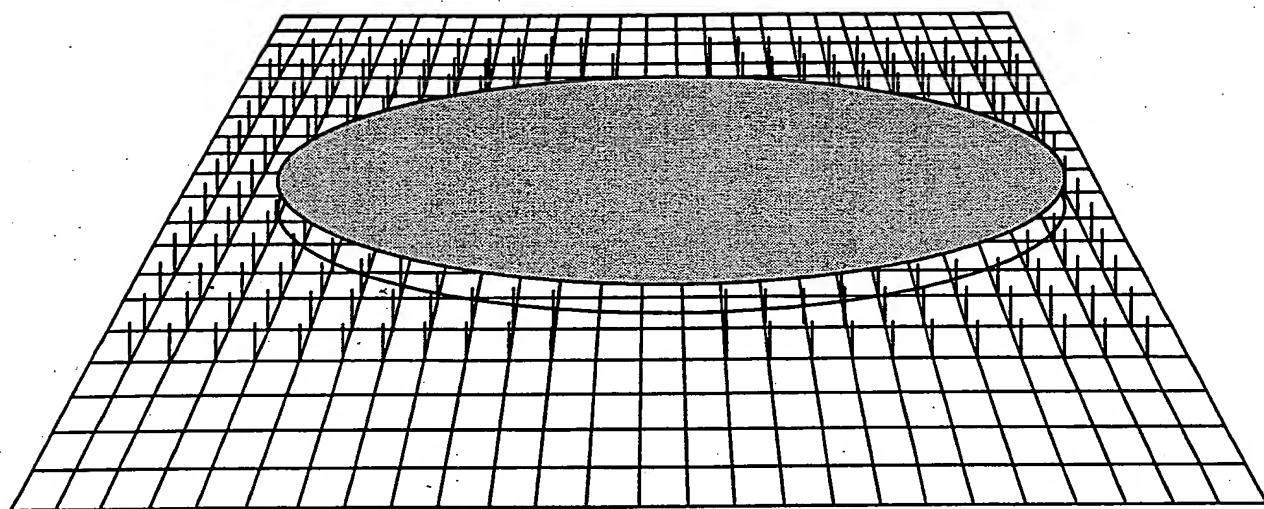


Fig. 4

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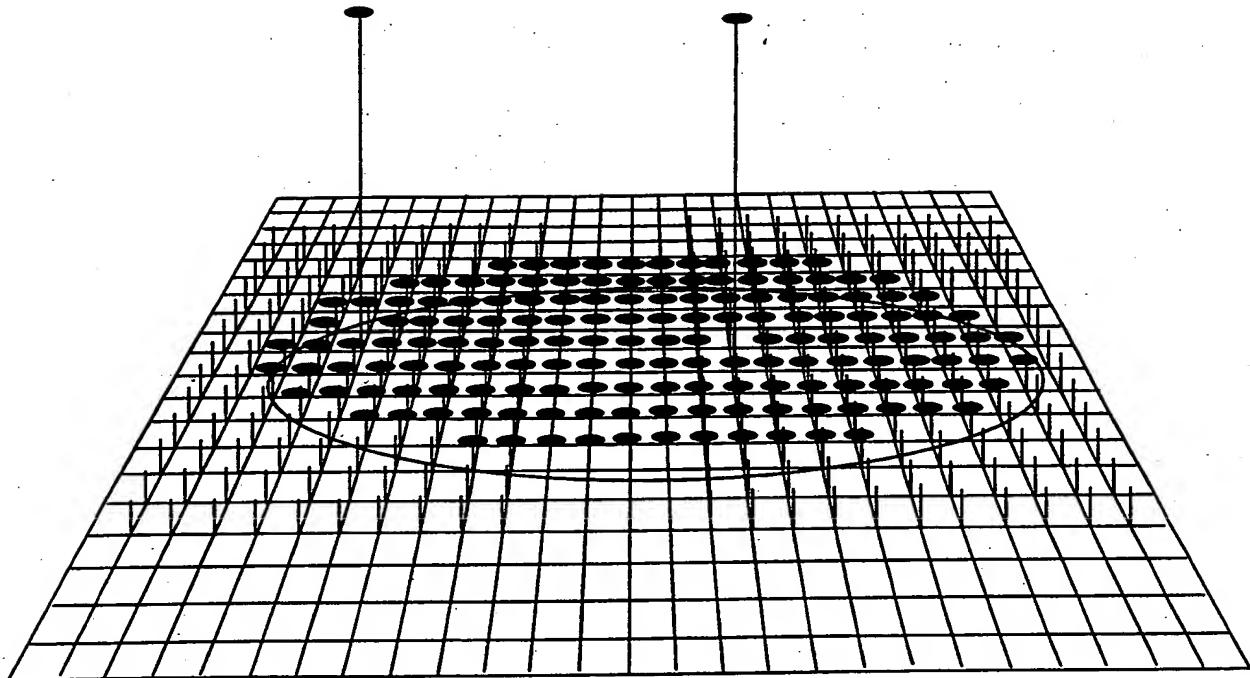


Fig. 5



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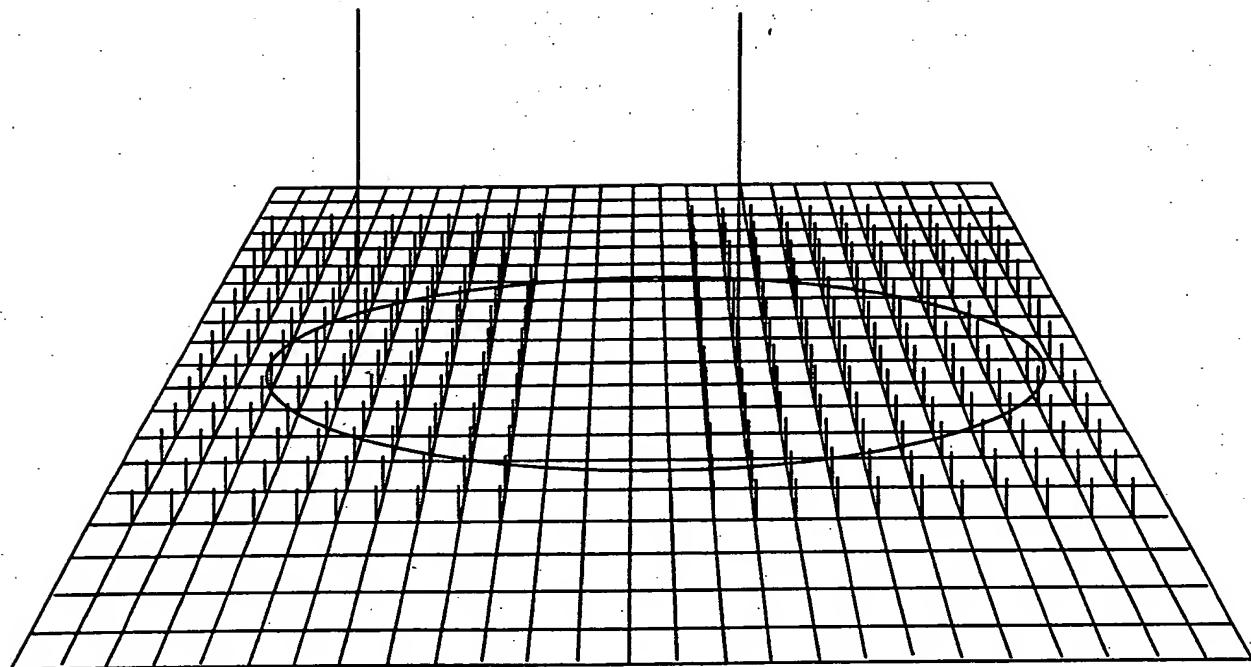


Fig. 6



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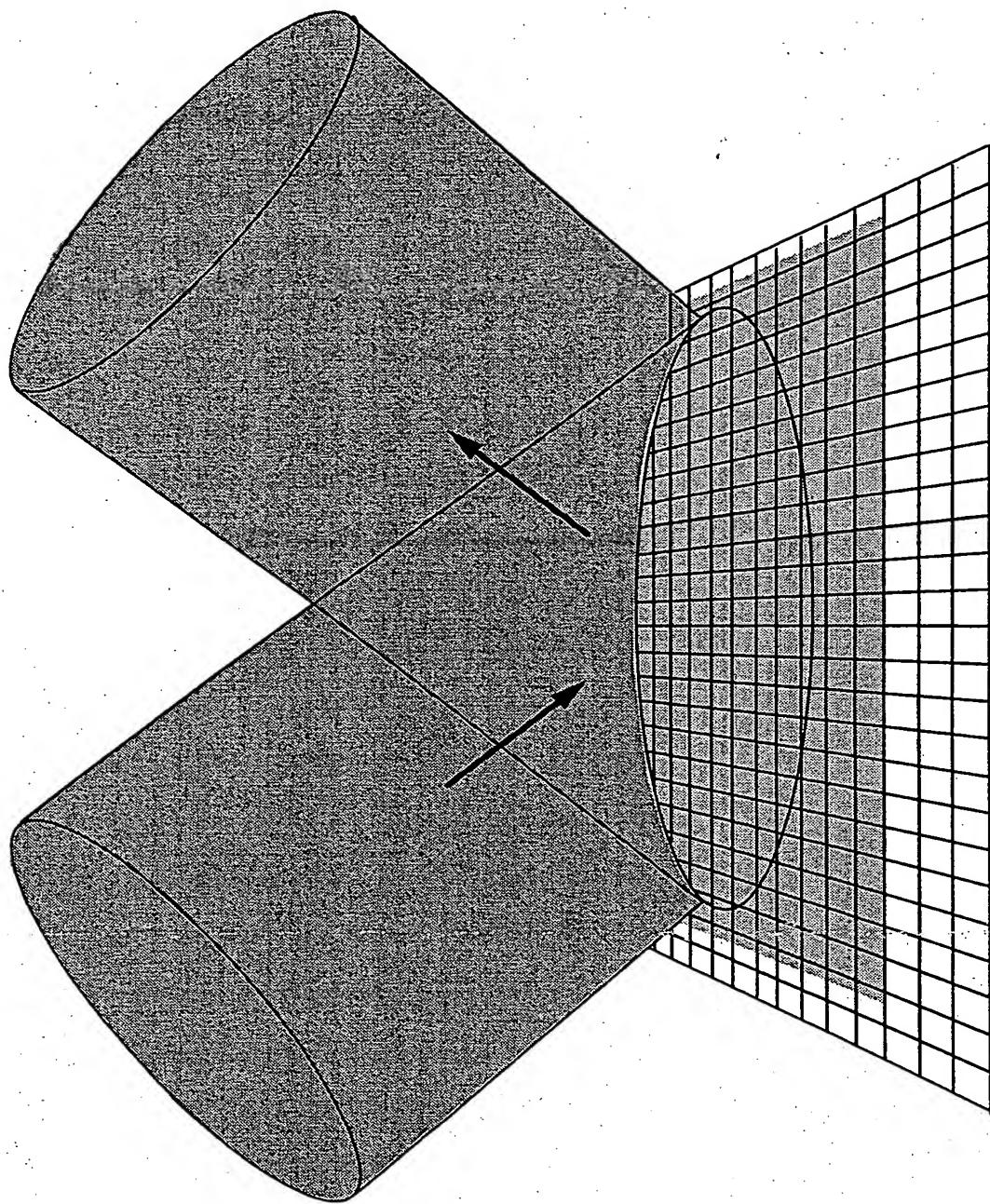


Fig. 7

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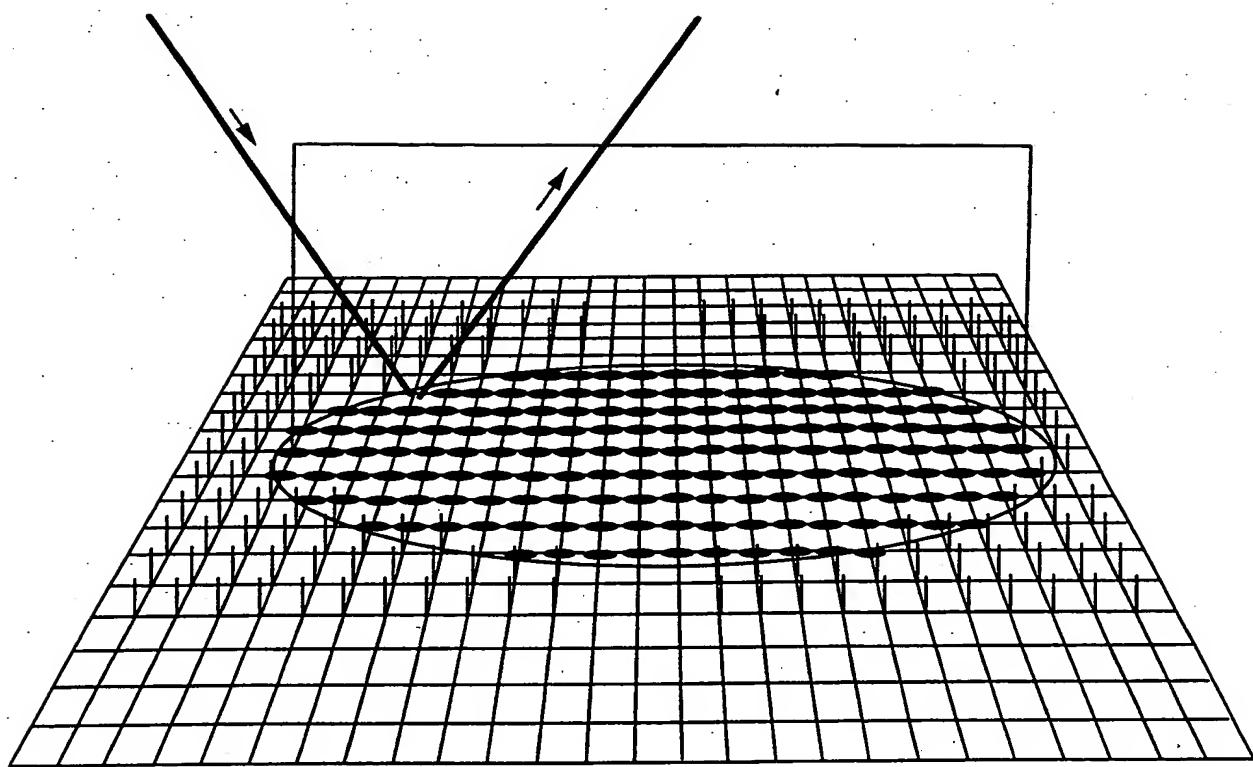


Fig. 8





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Replacement Sheet

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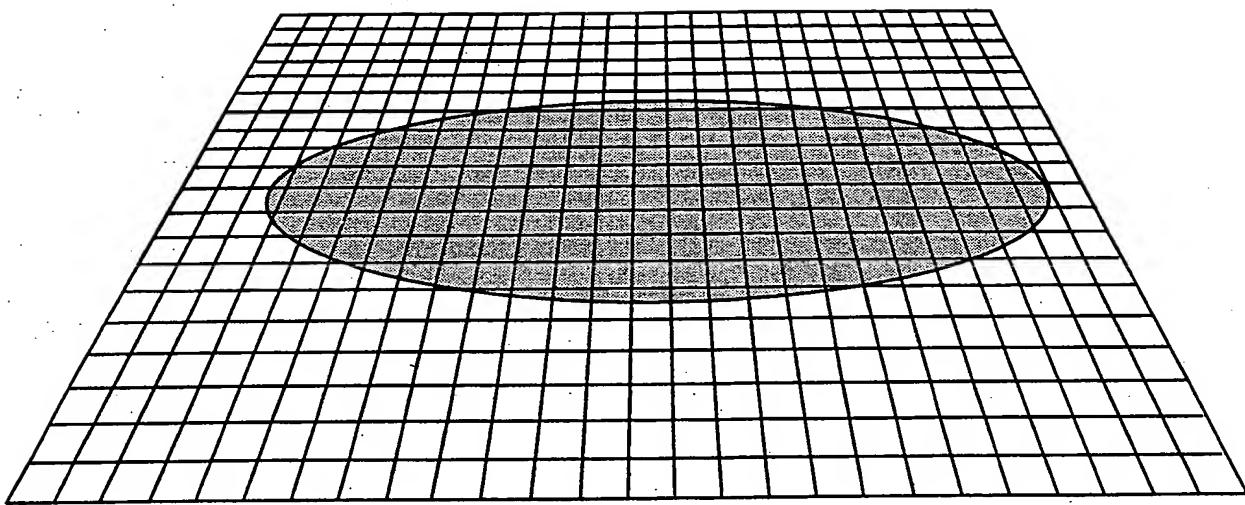


Fig. 9



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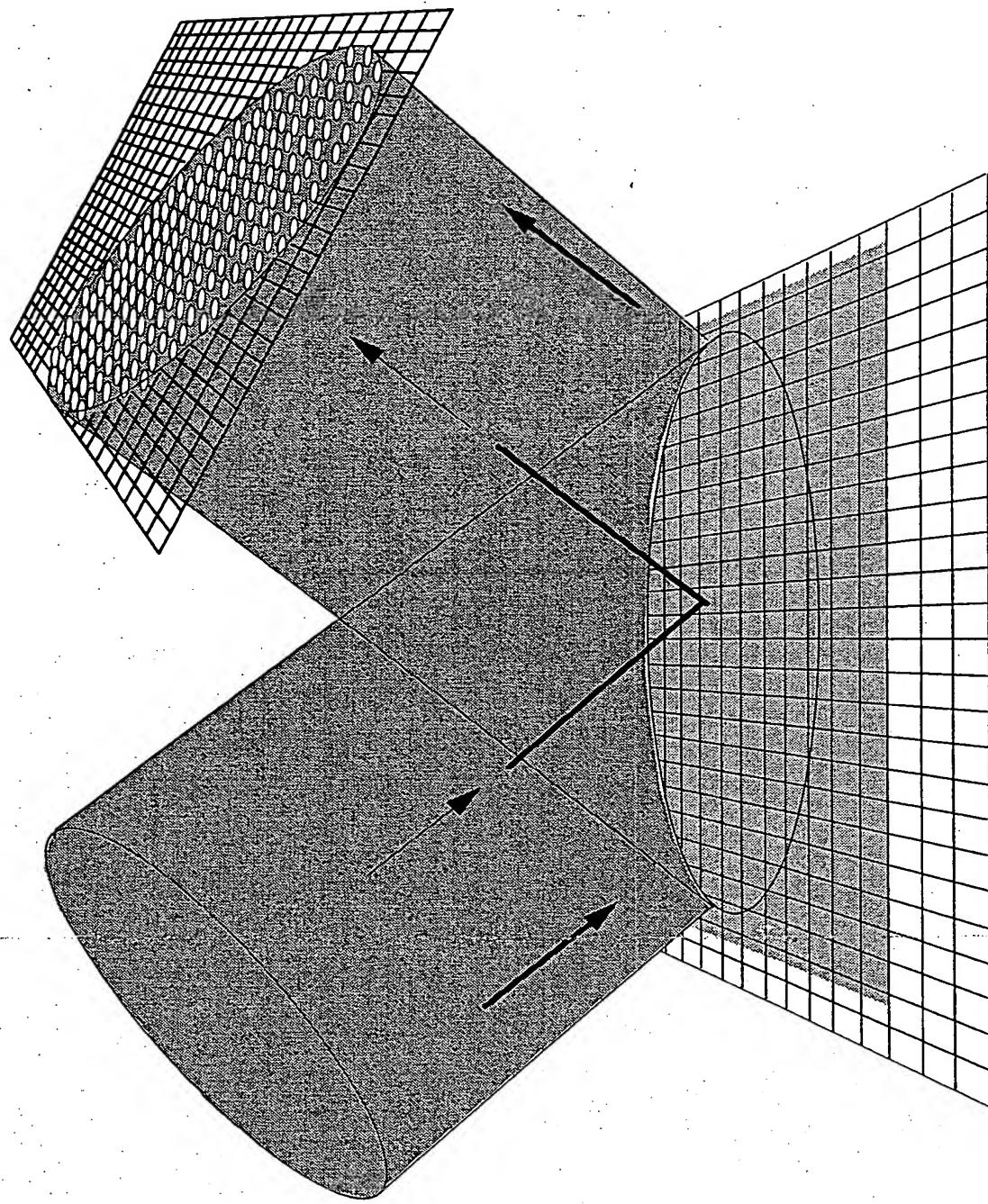


Fig. 10

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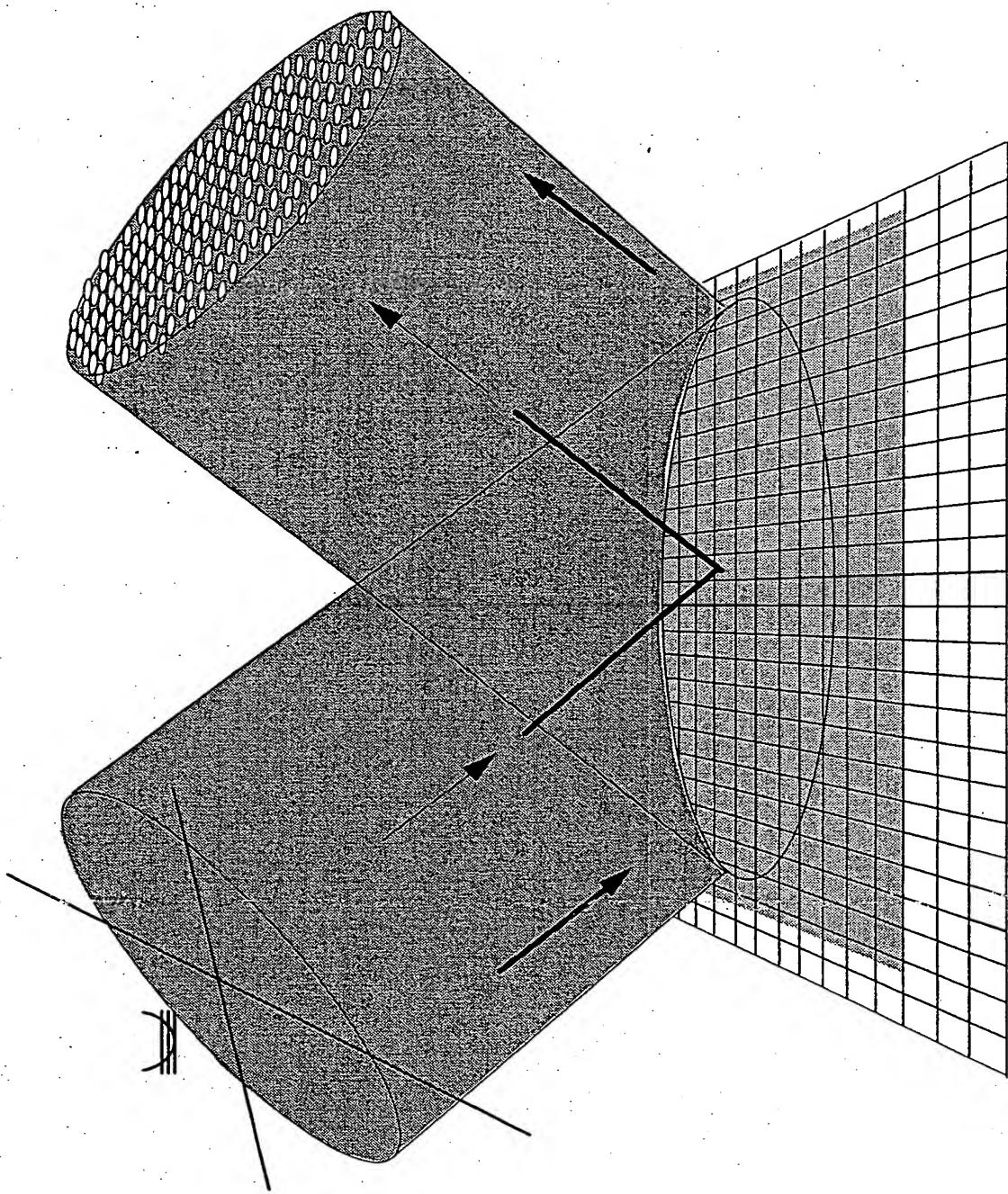


Fig. 11



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Examples of Optical Signal Formats

Principle	Label Type	Instrument	DDx Status
SCATTER	POLYMER BEADS/PARTICLES SILICA BEADS/PARTICLES MAGNETIC BEADS/PARTICLES METAL BEADS/PARTICLES METAL COATED BEADS/PARTICLES	SCATTEROMETRY	DEMONSTRATED
OPTICAL ABSORPTION	COLLOIDAL GOLD MAGNETIC BEADS	REFLECTOMETRY PHOTOMETRY	SCHEDULED
CHANGE IN POLARIZATION STATE	POLYMER BEADS SILICA BEADS	ELLISSOMETRY (WITH COMPENSATOR) POLARIMETRY (W/OUT COMPENSATOR)	SCHEDULED
CHANGE IN REFRACTIVE INDEX	HIGH REFRACTIVE INDEX OR OPTICALLY ACTIVE MATERIALS	ELLISSOMETRY (WITH COMPENSATOR) POLARIMETRY (W/OUT COMPENSATOR)	SCHEDULED
CHIRAL EFFECTS	AZIO DYES CHIRAL COMPOUNDS		ENVISIONED
DIFFRACTION EFFECTS	PATTERNED SURFACE	INTERFEROMETRY	ENVISIONED
SPECTROSCOPIC EFFECTS	WAVELENGTH SELECTIVE MATERIALS	SPECTROMETER	ENVISIONED

FIG. 12



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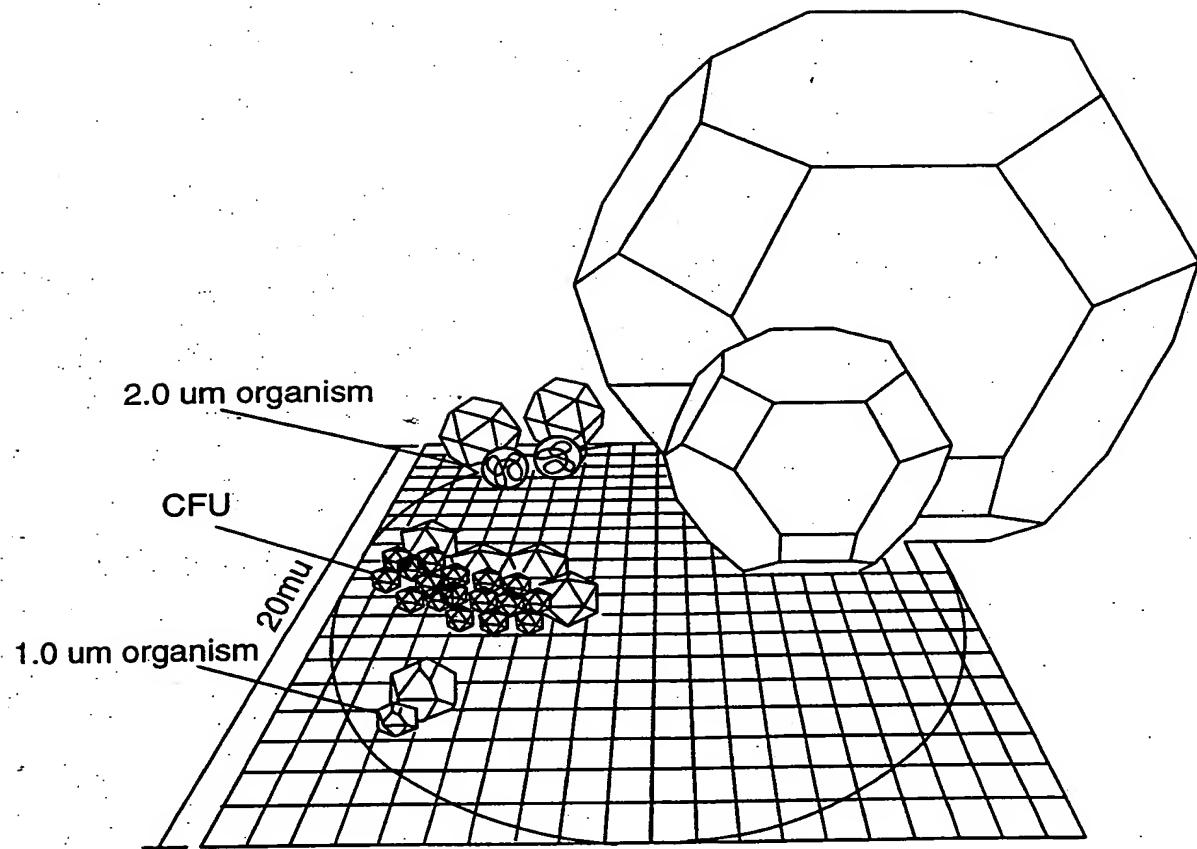


Fig. 13



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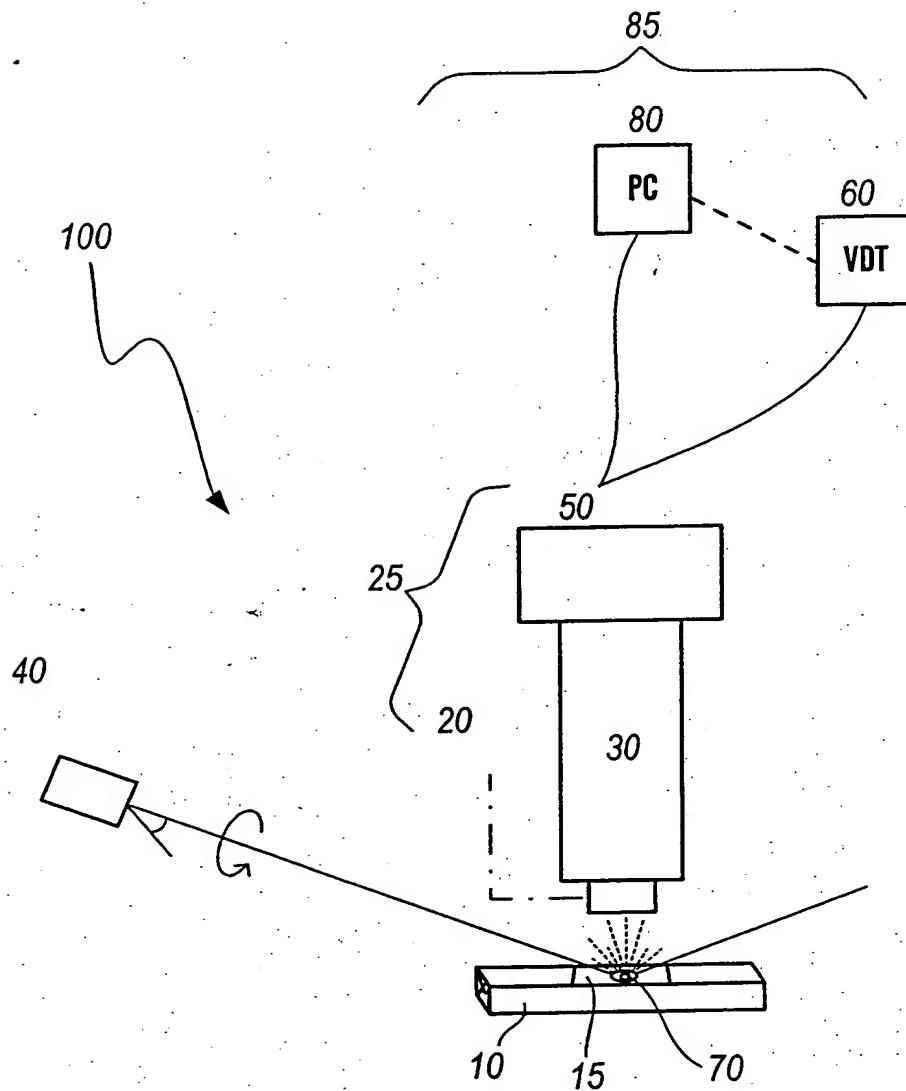


FIG. 14

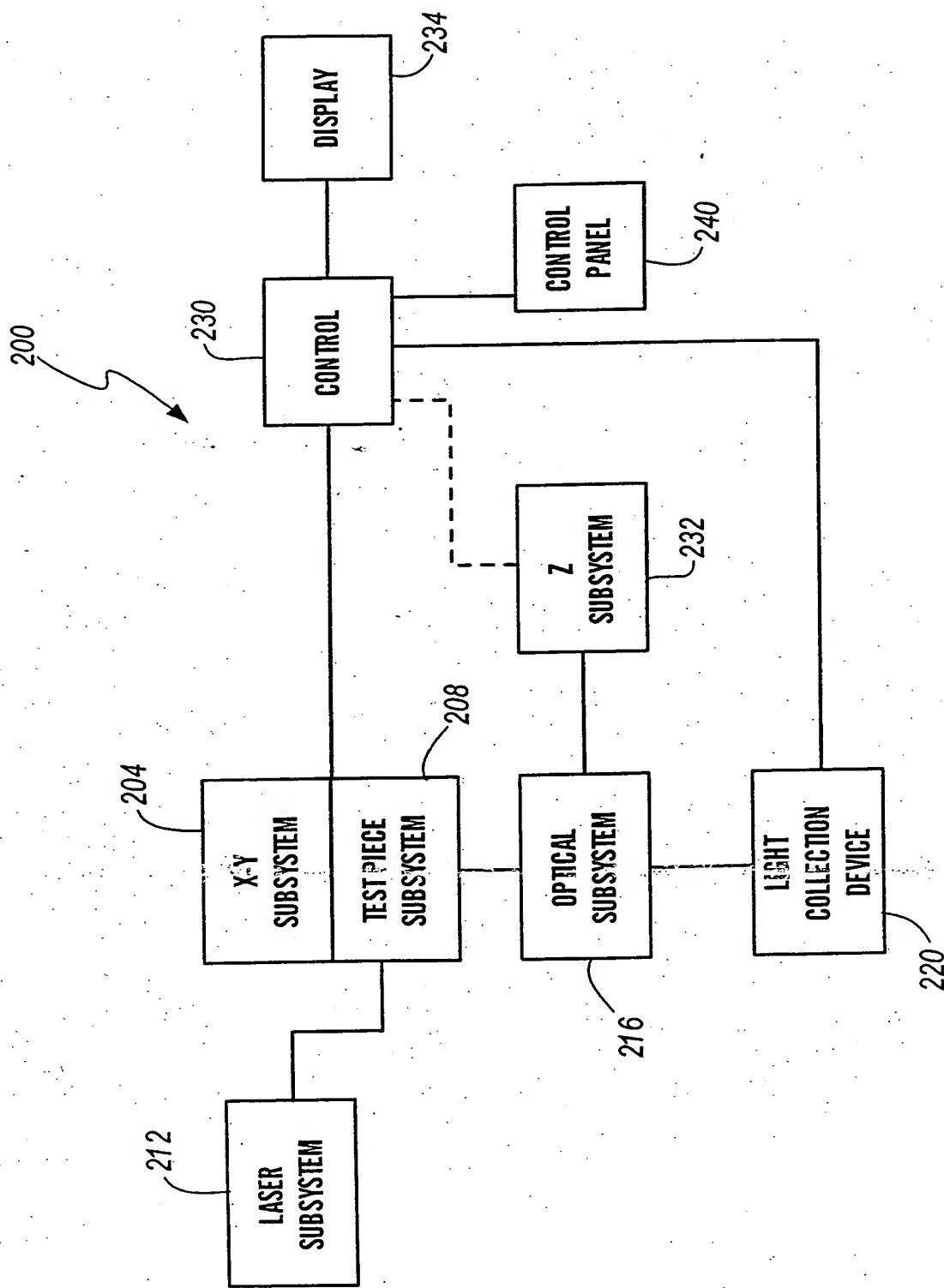


FIG. 15



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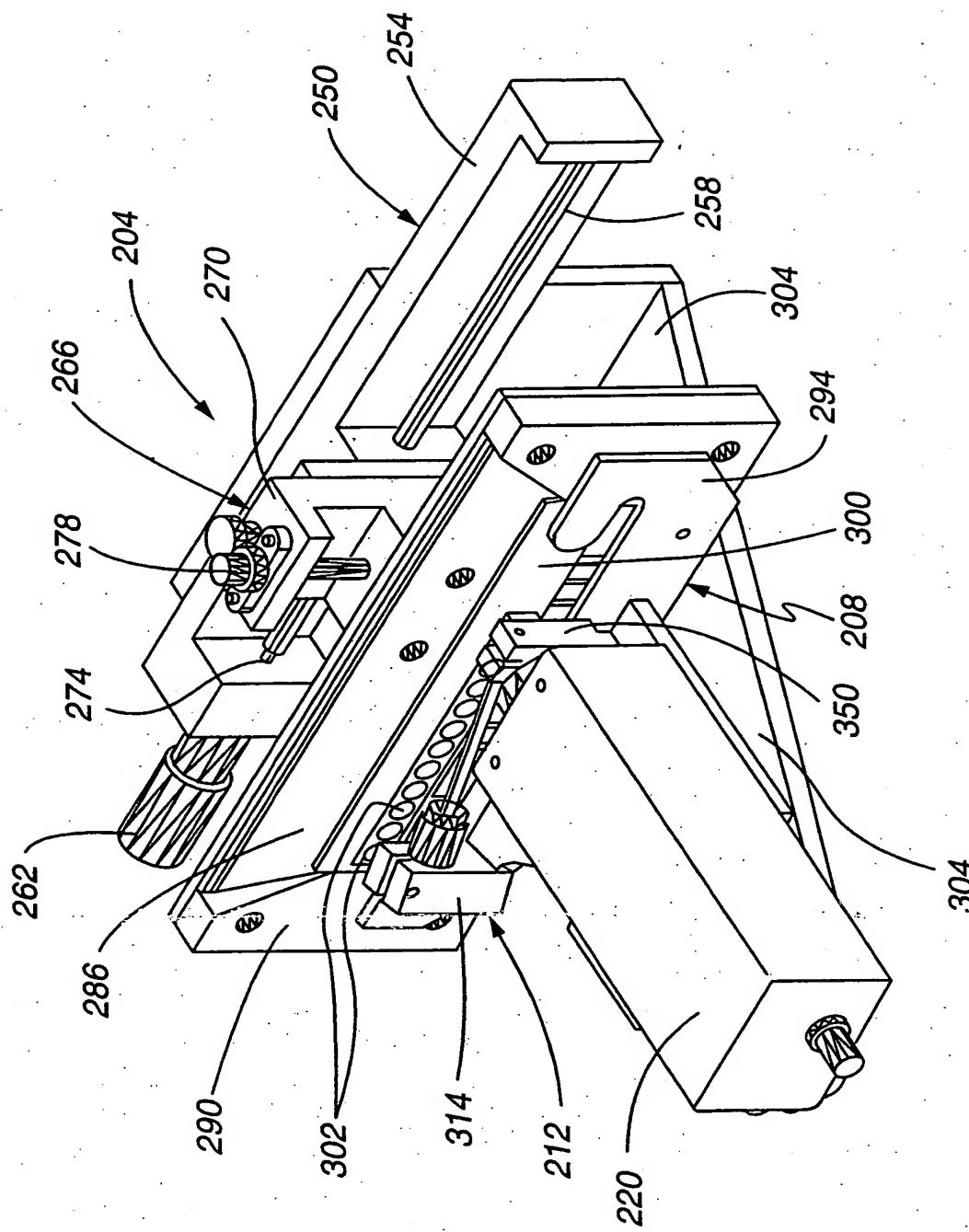


Fig. 16



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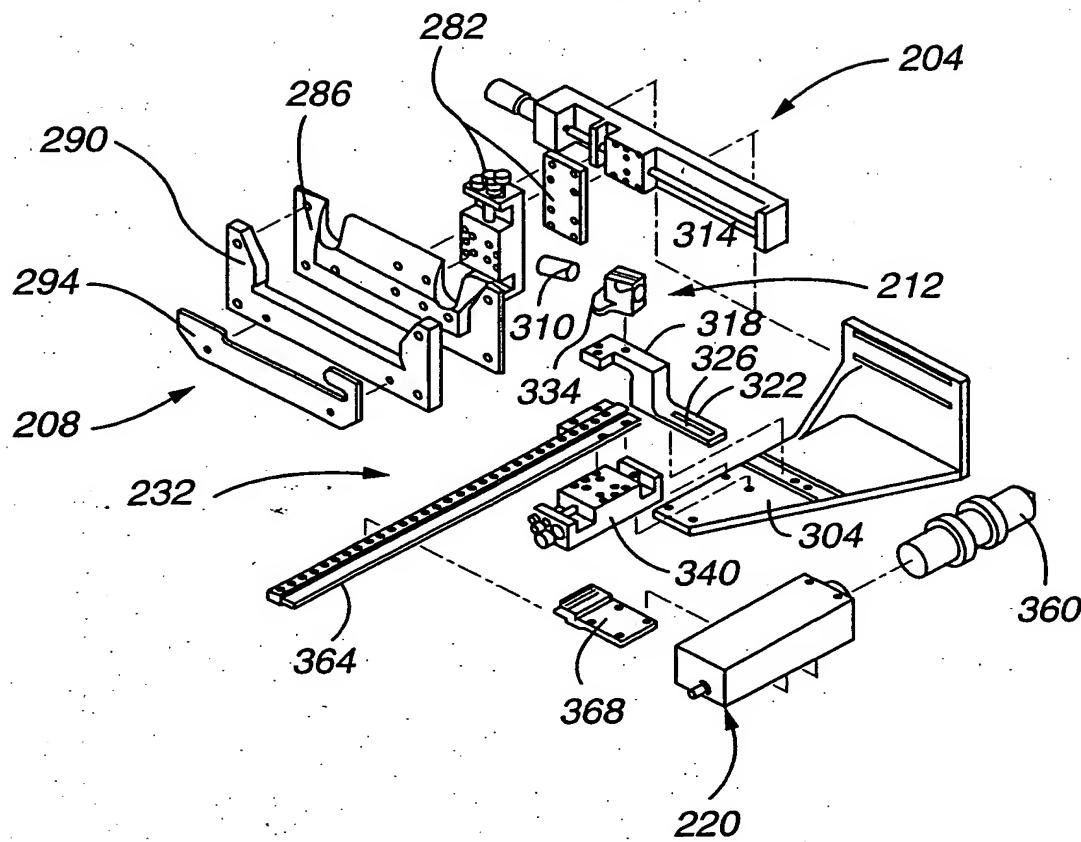


Fig. 17



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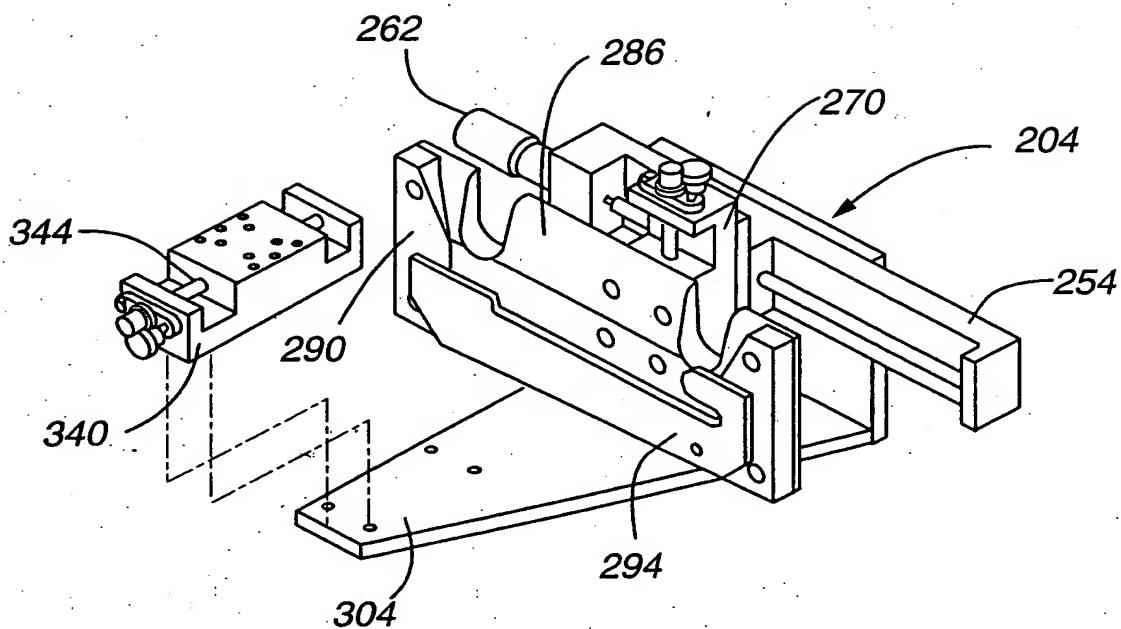


FIG. 18



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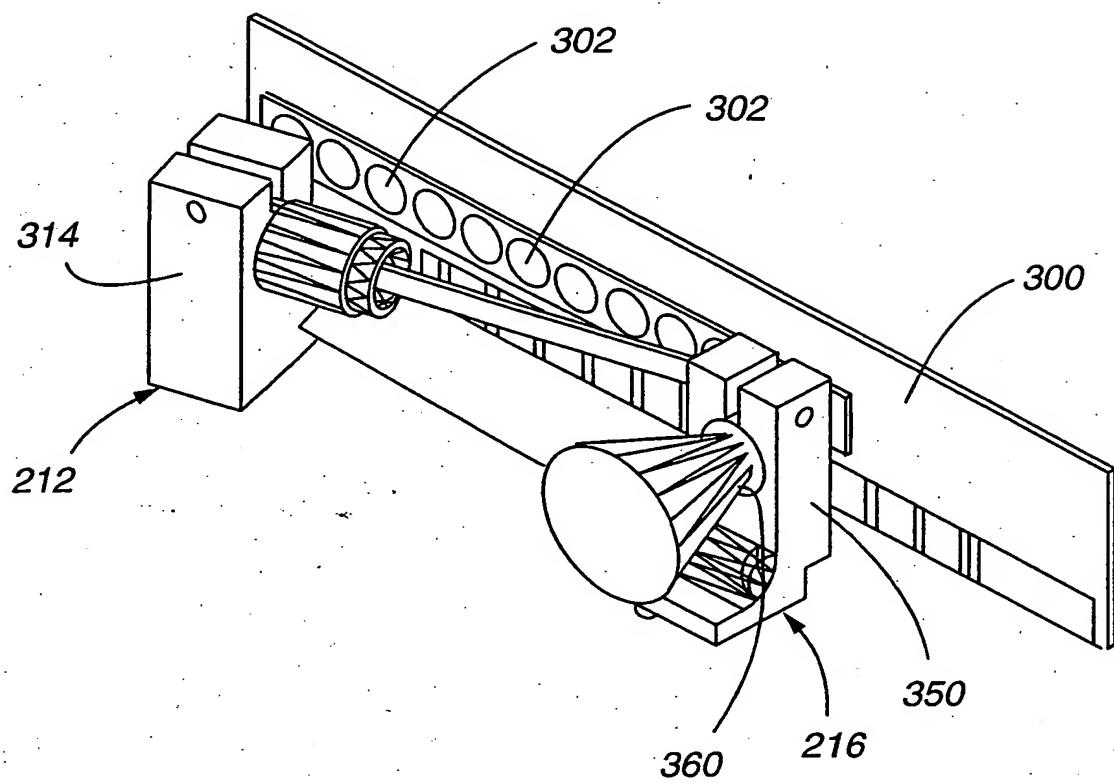


Fig. 19



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<p>2X MAG</p> <p>COLUMN</p> <p>4X MAG</p> <p>IP Controls</p> <p>Gain 2033 2500 3119</p> <p>Shutter 2033 2500 3118</p> <p>Lookup <input type="checkbox"/> Off</p> <p>X Value <input type="checkbox"/> 2.80</p> <p>Morphology <input type="checkbox"/> Off</p>	<p>Coordinated (screen)</p> <p>Interpolation Type <input type="checkbox"/> Bi-Linear</p> <p>Subsample <input type="checkbox"/> 3</p> <p>Display <input type="checkbox"/> On</p> <p>1st Filter <input type="checkbox"/> Off</p> <p>Parameter <input type="checkbox"/> Area (pixels) 0</p> <p>Lower Value <input type="checkbox"/> 0.00</p> <p>Upper Value <input type="checkbox"/> 1000.00</p> <p>Interval <input type="checkbox"/> Exclude</p> <p>Filter 1 <input type="checkbox"/> OFF</p> <p>2nd Filter <input type="checkbox"/> Off</p> <p>Parameter <input type="checkbox"/> Area (pixels) 0</p> <p>Lower Value <input type="checkbox"/> 0.00</p> <p>Upper Value <input type="checkbox"/> 1000.00</p> <p>Interval <input type="checkbox"/> Exclude</p> <p>Filter 2 <input type="checkbox"/> Connectivity 4/8 (8)</p>	<p>10X MAG</p> <p>Upper Value <input type="checkbox"/> 255.00</p> <p>Lower Value <input type="checkbox"/> 101.8</p> <p>Coordinate In</p> <p>Coordination In</p> <p>Z Focus <input type="checkbox"/> 7.000</p> <p>Y Start <input type="checkbox"/> 1.551</p> <p>X Start <input type="checkbox"/> 14.000</p> <p>Spots to text <input type="checkbox"/> AX</p> <p>AX</p>

Fig. 20



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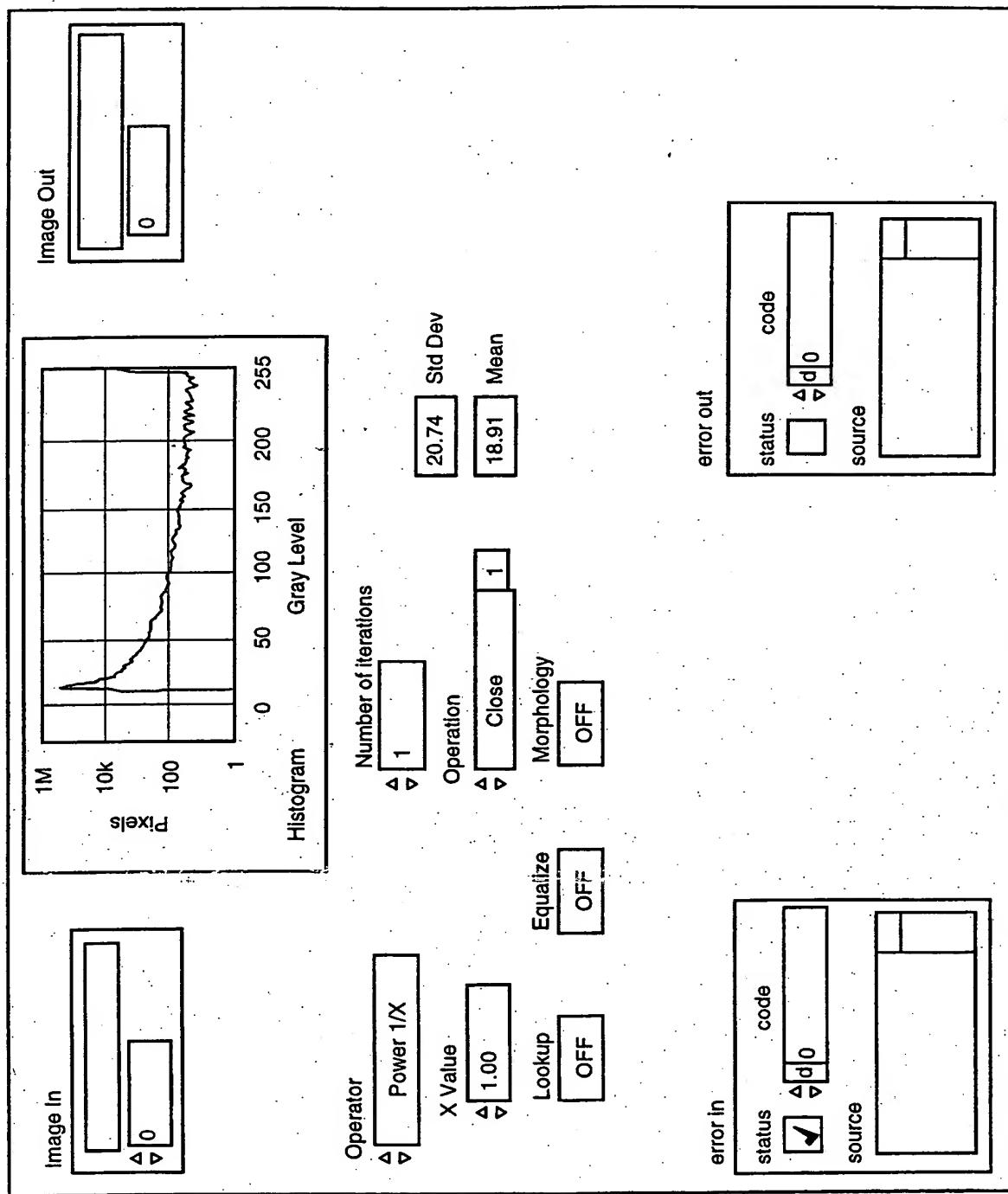
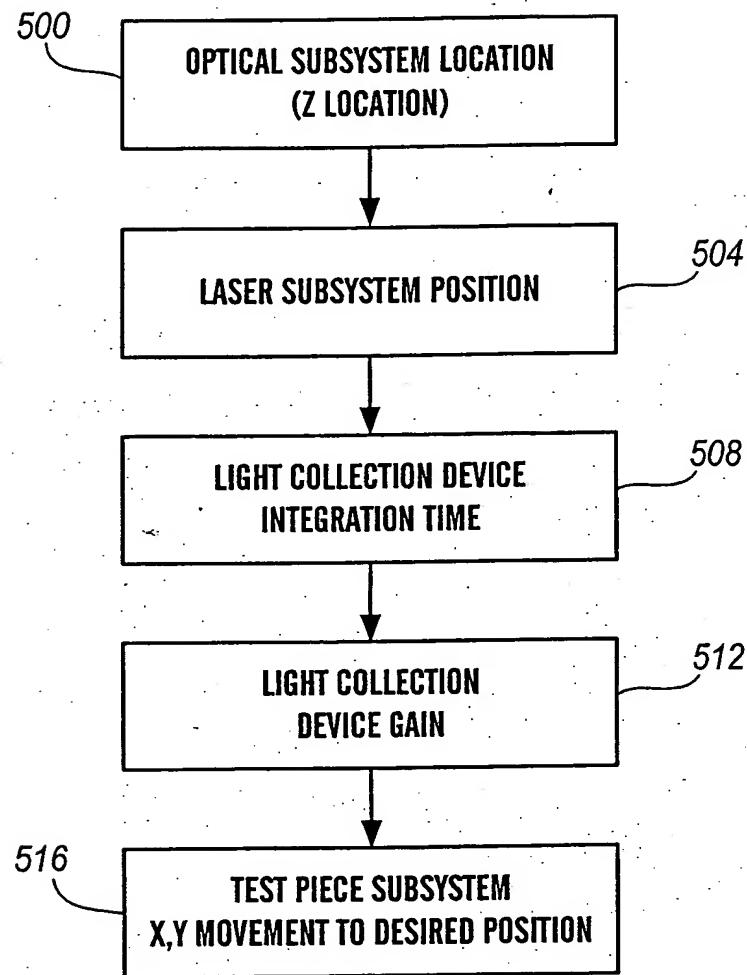


Fig. 21



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INSTRUMENT SETUP**FIG. 22**



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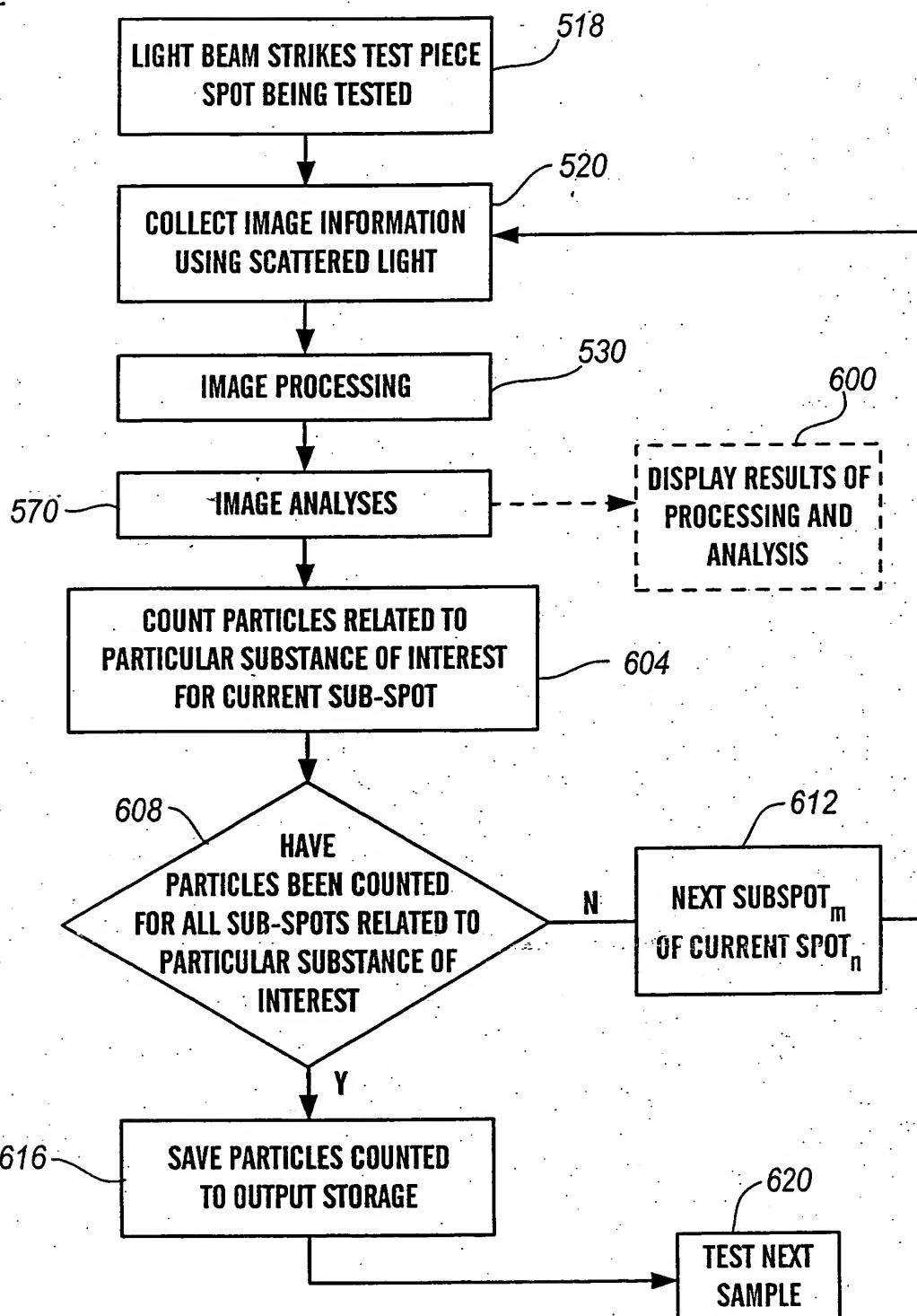
TESTING

FIG. 23



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IMAGE PROCESSING

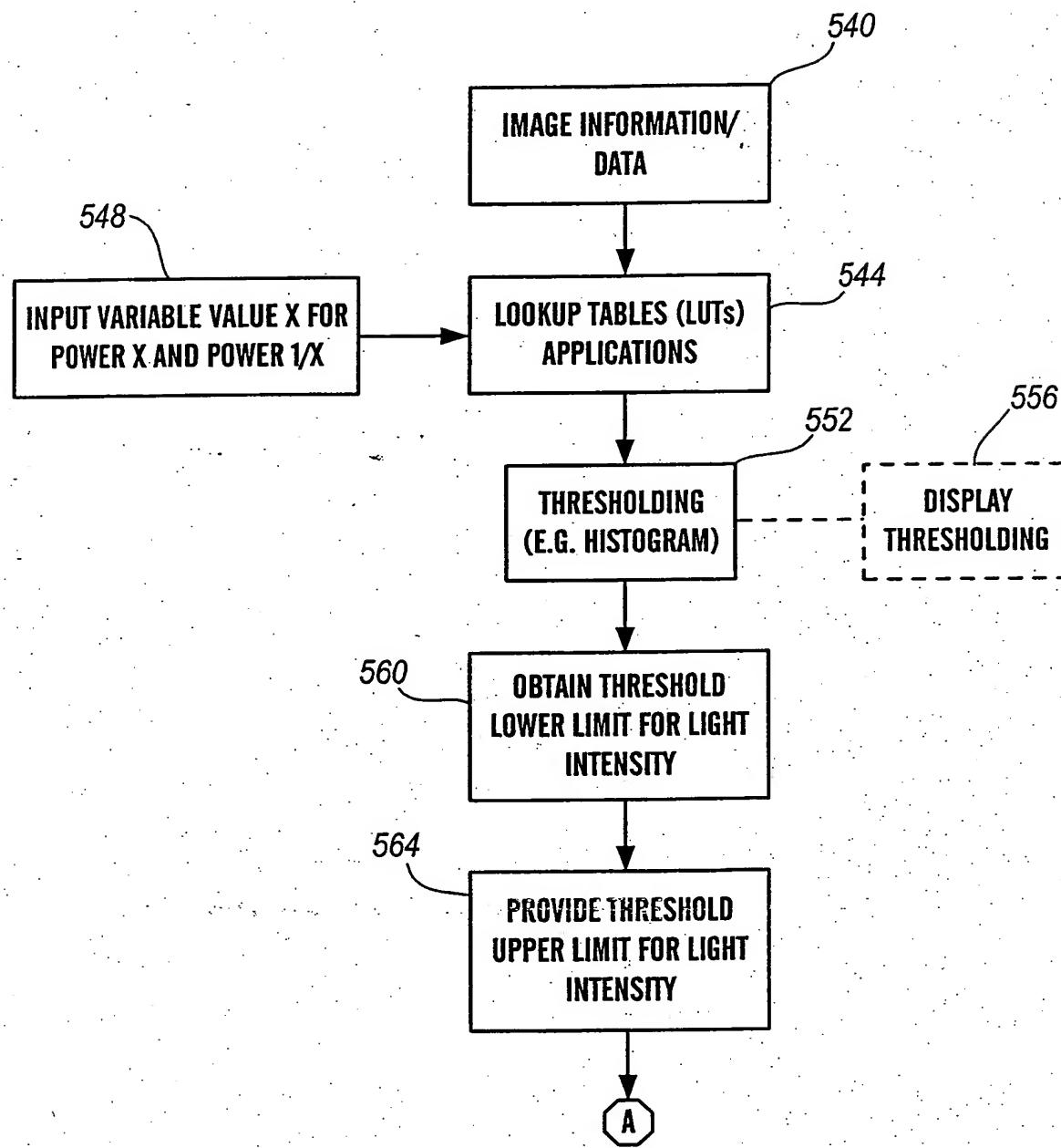


FIG. 24



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IMAGE ANALYSIS

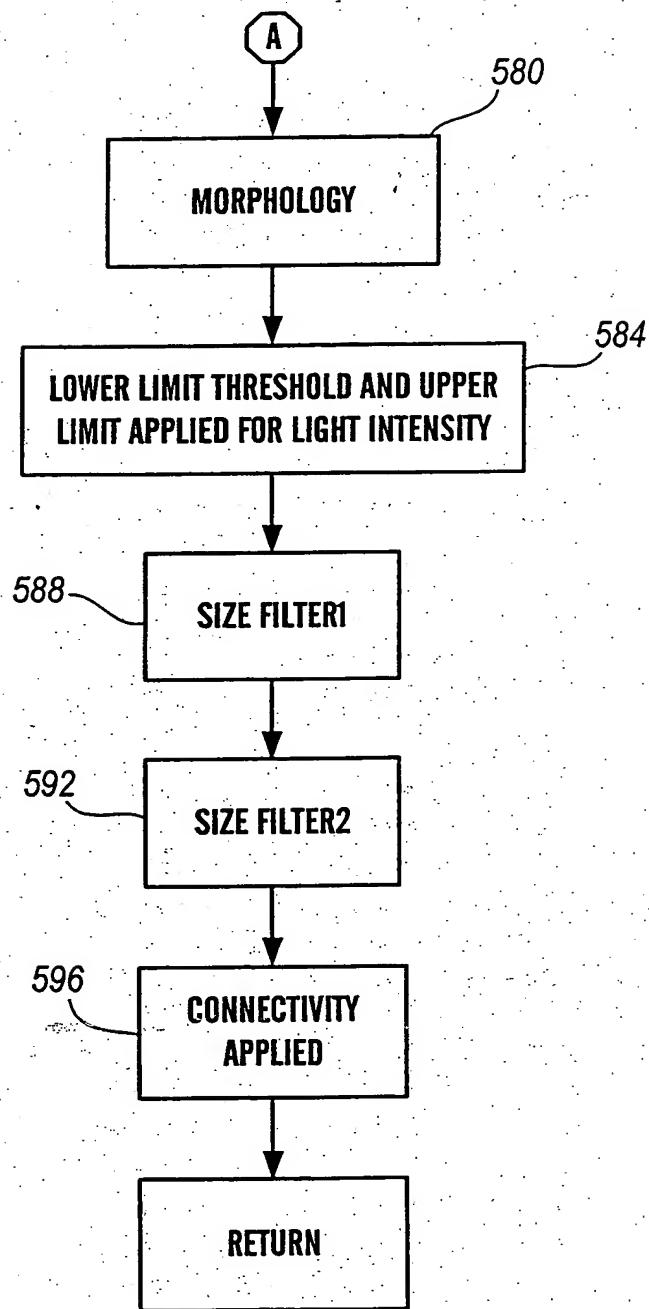


FIG. 25